



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/070,153	10/01/2002	Michael Sasges	13202.00376	9282
27160	7590	03/20/2006	EXAMINER	
KATTEN MUCHIN ROSENMAN LLP			LUU, THANH X	
525 WEST MONROE STREET			ART UNIT	
CHICAGO, IL 60661-3693			PAPER NUMBER	
			2878	
DATE MAILED: 03/20/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/070,153	Applicant(s) SASGES ET AL.	
	Examiner Thanh X. Luu	Art Unit 2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 10-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 10-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office Action is in response to amendments and remarks filed January 23, 2006. Claims 1-8 and 10-42 are currently pending.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1, 11, 22 and 32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, "said solid radiation detector" and "said radiation collector end portion" lacks proper antecedent basis. Furthermore, it appears that Applicant uses inconsistent terminology ("the collector", "said radiation collector" and "said solid radiation collector") to refer to the same element.

Regarding claims 11 and 32, it appears that Applicant uses inconsistent terminology ("the collector", "said radiation collector" and "said solid radiation collector") to refer to the same element. Such inconsistent terms causes antecedent basis problems.

Regarding claim 22, it appears that Applicant uses inconsistent terminology ("said radiation collector" and "said solid radiation collector") to refer to the same element. Such inconsistent terms causes antecedent basis problems.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-4, 8, 10, 32-35, 39 and 41, as understood, are rejected under 35

U.S.C. 102(b) as being anticipated by the publication of Kaas (WO 99/37978, published July 29, 1999).

Regarding claims 1-4, 8, 10, 32-35, 39 and 41, Kaas discloses (see Figs. 1 and 7) an ultraviolet (UV) water treatment system, comprising: an array of UV radiation sources (7) configured to generate a field of UV radiation in the water to be treated, the sources further comprising: a radiation sensor device (10 generally) configured to detect UV radiation in the field of radiation, the sensor device comprising: a solid radiation collector (fiber) having a longitudinal axis disposed substantially parallel to longitudinal axes of the radiations sources, the radiation collector having an end portion (an end of the fiber), the end portion configured to (i) receive UV radiation from a predefined arc around the collector within the field of radiation and (ii) redirect the received radiation along a predefined pathway substantially parallel to the radiation collector longitudinal axis (onto 3, then into 1, then guided along the longitudinal axis to the sensor at another end); and a sensor element (6) configured to detect and respond to radiation along the pathway incident on the sensor element. In addition, Kaas discloses (see Fig. 1) the radiation collector is remote from the sensor element and a generally circular cross-section. Furthermore, as understood, the predefined arc around the collector may be viewed as being divided into two or more arcs.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 7, 38, 40 and 42, as understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaas.

Regarding claims 40 and 42, Kaas discloses the claimed invention as set forth above. Kaas does not specifically disclose that the radiation collector has a polygonal cross-section. However, choosing the cross-sectional shape of the radiation collector is a matter of design choice and requires only routine skill in the art. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a radiation collector having a polygonal cross-section in the apparatus of Kaas to obtain a more resilient or easier to clean collector structure, as desired.

Regarding claims 7 and 38, Kaas discloses the claimed invention as set forth above. Kaas does not specifically disclose the collector directly mounted to the sensor element as claimed. However, choosing such a configuration is a matter of design choice and would require only routine skill in the art. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide such a direct configuration in the apparatus of Kaas to improve detection by reducing light loss by eliminating indirect coupling or to provide a more compact configuration.

5. Claims 11-15, 18-25 and 28-31, as understood, are rejected under 35 U.S.C.

103(a) as being unpatentable over Kaas in view of Kurtz et al. (U.S. Patent 5,660,719).

Regarding claims 11-15, 19-25 and 29-31, Kaas discloses the claimed invention as set forth above. Kaas does not specifically disclose a frame having a support member as claimed. Furthermore, Kurtz et al. teach (see Fig. 2) a similar device having a frame or protecting sleeve having a first support member for the radiation source and sensor device as claimed. Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide such a frame in the apparatus of Kaas in view of Kurtz et al. to more easily clean or replace of the parts of the device.

Regarding claims 18 and 28, Kaas in view of Kurtz et al. disclose the claimed invention as set forth above. Kaas and Kurtz et al. do not specifically disclose the collector directly mounted to the sensor element as claimed. However, choosing such a configuration is a matter of design choice and would require only routine skill in the art. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide such a direct configuration in the apparatus of Kaas in view of Kurtz et al. to improve detection by reducing light loss by eliminating indirect coupling or to provide a more compact configuration.

6. Claims 1-8, 11-15, 17-25, 27-35 and 37-42, as understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurtz et al. in view of Horstmann (DE 2518164).

Regarding claims 1-6, 11-17, 19, 21, 22-25, 27, 29, 31-35, 37, 39 and 41, Kurtz et al. disclose (see Fig. 2) a water treatment UV radiation sensor device for detecting

UV radiation from a plurality of submerged UV radiation sources (20) disposed in a predefined arc around the sensor device in a radiation field, comprising: a sensor element (112) configured to detect and respond to radiation along the pathway incident on the sensor element. Kurtz et al. also disclose (see Fig. 2) a frame or protecting sleeve having a first support member and at least one radiation source assembly in engagement with the first support member. Kurtz et al. further disclose (see Fig. 2) at least one UV source disposed within a protective sleeve (22). The predefined arc comprising the arcs or partial arcs as claimed. The sensor element of Kurtz et al. appears to be enclosed and coupled to a radiation collector (curved end of tube), however the radiation collector is not explicitly or specifically described. Horstmann teach in a UV treatment device (see Figs.) a solid radiation collector (5 and 6) having a longitudinal axis substantially parallel to the radiation source, the radiation collector having an end portion (5) configured to (i) receive UV radiation from the UV radiation sources (2) and (ii) redirect the received radiation along a predefined pathway (along 6) substantially parallel to the radiation collector longitudinal axis to a sensor element. Horstmann further recognize (see abstract) that such a collector provides detection from all sides. Horstmann also disclose (see abstract) the collector (5) having a generally convex (spherical) with a reflective surface (mirror finish surface) to direct the radiation along the pathway, the sensor is mounted remote (see Figs.) from the collector, and the collector has a circular cross-section. Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide such a collector in the apparatus of Kurtz et al. in view of Horstmann to more effectively collect radiation

Art Unit: 2878

from all sides and obtain improved detection as taught.

Regarding claims 20, 30, 40 and 42, Kurtz et al. in view of Horstmann discloses the claimed invention as set forth above. Kurtz et al. and Horstmann do not specifically disclose the collector having a polygonal cross-section. However, choosing the cross-sectional shape of the radiation collector is a matter of design choice and requires only routine skill in the art. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a radiation collector having a polygonal cross-section in the apparatus of Kurtz et al. in view of Horstmann to obtain as desired.

Regarding claims 7, 18, 28 and 38, Kurtz et al. (see Fig. 2) appears to show the sensor directly mounted to the collector (end of tube), but it is not explicitly or specifically disclosed. However, directly mounting a sensor to a radiation collector is notoriously well known. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide such a mounting configuration in the apparatus of Kurtz et al. in view of Horstmann to reduce radiation losses between indirect couplings and improve detection.

7. Claims 1-8 and 11-42, as understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurtz et al. in view of Ebel et al. (U.S. Patent 6,592,816).

Regarding claims 1-6, 8 and 11-17, 19-27, 29-37 and 39-42, Kurtz et al. disclose (see Fig. 2) a water treatment UV radiation sensor device for detecting UV radiation from a plurality of submerged UV radiation sources (20) disposed in a predefined arc around the sensor device in a radiation field, comprising: a sensor element (112) configured to detect and respond to radiation along the pathway incident on the sensor

Art Unit: 2878

element. Kurtz et al. also disclose (see Fig. 2) a frame or protecting sleeve having a first support member and at least one radiation source assembly in engagement with the first support member. Kurtz et al. further disclose (see Fig. 2) at least one UV source disposed within a protective sleeve (22). The predefined arc comprising the arcs or partial arcs as claimed. The sensor element of Kurtz et al. appears to be enclosed and coupled to a radiation collector (curved end of tube), however the radiation collector is not explicitly or specifically described. Ebel et al. teach in a UV treatment device (see Fig. 2) a solid radiation collector (27, 30) having a longitudinal axis substantially parallel to the radiation source and having an end portion (27) configured to (i) receive UV radiation from the UV radiation sources (21, 22) and (ii) redirect the received radiation along a predefined pathway (along 30) substantially parallel to the radiation collector longitudinal axis to a sensor element. Ebel et al. further recognize (see col. 4, lines 54-55) that such a collector provides for a large field of view for collecting radiation. Ebel et al. also disclose (see Fig. 2) the collector (27) having a generally convex (spherical part) or concave (indentation in sphere) with a reflective surface (inside sphere) to direct the radiation along the pathway, the sensor is mounted remote from the collector, and the collector has a polygonal or circular cross-section. Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide such a collector in the apparatus of Kurtz et al. in view of Ebel et al. to more effectively collect radiation from a large field of view and obtain improved detection.

Regarding claims 7, 18, 28 and 38, Kurtz et al. (see Fig. 2) appears to show the sensor directly mounted to the collector (end of tube), but it is not explicitly or

specifically disclosed. However, directly mounting a sensor to a radiation collector is notoriously well known. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide such a mounting configuration in the apparatus of Kurtz et al. in view of Ebel et al. to reduce radiation losses between indirect couplings and improve detection.

Response to Arguments

8. Applicant's arguments filed January 23, 2006 have been fully considered but they are not persuasive.

Applicant's generally conclusory statements are not found to be persuasive.

With regard to Kaas, it is unclear how radiation that is transmitted from a side of an end of a fiber to a sensor at another end of the fiber, is not directed substantially along a longitudinal axis of the collector (an end of the fiber).

With regard to Kurtz, the reference is used in combination with a secondary reference. Thus, Applicant's comments towards Kurtz are irrelevant since the rest of the claim language is taught in the secondary reference. Examiner reminds Applicant that the 103 rejections should be taken together and in combination with the secondary references and not singly.

With regard to Ebel and Horstmann, as set forth above, the references teach a solid radiation collector as claimed.

Applicant also generally asserts that there is no motivation to combine the references. However, Applicant has failed to set forth any reasons why one of ordinary skill in the art would not form such combinations.

Thus, as set forth above, this rejection is proper.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh X. Luu whose telephone number is 571-272-2441. The examiner can normally be reached on M-F 6:00AM-3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on 571-272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

Art Unit: 2878

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).



Thanh X Luu
Primary Examiner
Art Unit 2878

03/2006